

PART 1 - GENERAL

1.1 RELATED
SECTIONS

- .1 Section 01 91 00 - Commissioning.
- .2 Section 23 05 00 - Common Work Results - Mechanical.

1.2 REFERENCES

- .1 American Society of Heating, Refrigeration and Air Conditioning Engineers (ASHRAE)
 - .1 ANSI/ASHRAE 52.1-1992, Gravimetric and Dust Spot Procedures for Testing Air-Cleaning Devices Used in General Ventilation for Removing Particulate Matter.
- .2 Canadian Standards Association (CSA International)
 - .1 CSA C22.2 No. 24-93(R2008), Temperature-Indicating and Regulating Equipment.
 - .2 CSA C22.2 No.46-M1988(R2001), Electric Air-Heaters.
- .3 Canadian Electrical Code.

1.3 ACTION AND
INFORMATIONAL
SUBMITTALS

- .1 Provide submittals in accordance with Section 01 33 00.
- .2 Product Data:
 - .1 Provide manufacturer's printed product literature, specifications and datasheets. Include product characteristics, performance criteria, and limitations.
- .3 Shop Drawings:
 - .1 Submit shop drawings in accordance with Division 1.
 - .2 Indicate the following:
 - .1 Equipment, capacity, piping, and connections.
 - .2 Dimensions, internal and external construction details, recommended method of installation with proposed structural steel support, sizes and location of mounting bolt holes.
- .4 Quality assurance submittals: submit following in accordance with Division 1.
 - .1 Certificates: submit certificates signed by manufacturer certifying that materials comply with specified performance characteristics and physical properties.

1.3 ACTION AND
INFORMATIONAL
SUBMITTALS
(Cont'd)

- .4 (Cont'd)
 - .2 Instructions: submit manufacturer's installation instructions.
- .5 Health and Safety Requirements: do construction occupational health and safety in accordance with Section 01 35 29.06.

1.4 CLOSEOUT
SUBMITTALS

- .1 Provide operation and maintenance data for incorporation into manual specified in Section 01 78 00.

1.5 MAINTENANCE
MATERIAL SUBMITTAL

- .1 Provide maintenance materials in accordance with Division 1.
- .2 Extra Stock Parts:
 - .1 Spare filters: one set.

1.6 DELIVERY,
STORAGE AND
HANDLING

- .1 Packing, shipping, handling and unloading:
 - .1 Deliver, store and handle in accordance with Division 1.
- .2 Waste Management and Disposal:
 - .1 Construction/Demolition Waste Management and Disposal: separate waste materials for reuse and recycling in accordance with Section 01 74 20.

PART 2 - PRODUCTS

2.1 GENERAL

- .1 Provide packaged factory assembled unit consisting of cabinet, fan, fan motor, intake/exhaust assembly, hot water heating coil, controls, air filter.
- .2 Certification of components and construction of factory assembled unit: to ANSI Z21.47/CSA 2.3A for forced air central furnace.
- .3 Capacity: as indicated.
- .4 Type: as indicated.

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| <u>2.2 CABINET</u> | <ul style="list-style-type: none">.1 1.0 mm thick minimum steel with baked enamel finish..2 Welded steel base for floor type..3 Easily removed and secured access doors for components requiring service..4 Thermally insulated cabinet. |
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| <u>2.3 HEATING COIL</u> | <ul style="list-style-type: none">.1 Aluminum fins fitted to copper tubes coil..2 Warranty: non-prorated 10 years. |
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| <u>2.4 CIRCULATION ASSEMBLY</u> | <ul style="list-style-type: none">.1 Blower: centrifugal type:<ul style="list-style-type: none">.1 Statically and dynamically balanced..2 Rubber mounted..2 Motor: variable speed, using ECM motor overload protection, adjustable mounts. |
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| <u>2.5 AIR FILTERS</u> | <ul style="list-style-type: none">.1 Filter and filter housing to be supplied and field installed by contractor. Filter shall be 25 mm thick, glass fiber, disposable type 30% efficiency to ASHRAE 52..2 Filter size: as indicated..3 Face velocity shall not exceed 2.5 m/s (500 fpm). |
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| <u>2.6 CONTROLS</u> | <ul style="list-style-type: none">.1 Temperature sensor(s): by Controls Contractor under Division 25..2 Integral freeze stat to shut down fan..3 Furnace complete with control board and relays to output to motorized dumpers, HRV, wall-mounted thermostat. |
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PART 3 - EXECUTION

3.1 INSTALLATION

- .1 Install in accordance with manufacturer's instructions, regulations of authorities having jurisdiction and to CAN/CSA-B149.1 and Canadian Electric Code.
- .2 Size anchor bolts to withstand seismic acceleration and velocity forces.

3.2 START-UP AND COMMISSIONING

- .1 Start-up and submit written report to Engineer.
- .2 Commissioning in accordance with Section 01 91 31.

3.3 CLEANING

- .1 Clean in accordance with Section 01 74 11.
- .2 Upon completion and verification of performance of installation, remove surplus materials, excess materials, rubbish, tools and equipment.